Polylepion russelli (Labridae), a trans-Indo-Pacific species

by

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Received: 10 Apr. 2013
Accepted: 23 May 2013
Editor: R. Causse

Résumé. – *Polylepion russelli* (Labridae), une espèce trans-indo-pacifique.

La vieille de Russell, *Polylepion russelli*, est une espèce relativement rare, connue des récifs profonds de quelques îles du Pacifique central : îles Ryukyu (Japon), Hawaii et Moorea (Polynésie française). Son signalement à La Réunion, environ 10 000 km plus à l'ouest, a de quoi surprendre mais l'identification a été confirmée par les caractères morphométriques et le séquençage du gène CO1. Cette découverte tardive pourrait être liée aux lacunes d'échantillonnage des pentes récifales et à la faible densité de l'espèce dans son milieu.

Key words. – Labridae – *Polylepion russelli* – Réunion Island – Range extension – DNA barcoding – New record.

Polylepion is a small genus of relatively deepwater (> 100 m) demersal labrids. This genus closely related to *Bodianus* (Gomon, 1997) comprises two species: *Polylepion russelli* (Gomon & Randall, 1975) known from the Ryukyu Islands (Masuda *et al*., 1984), Hawaiian Islands (Gomon and Randall, 1975), and Society Islands (Hubert *et al*., 2011); and *Polylepion cruentum* Gomon, 1977 from the Tropical Eastern Pacific, ranging from Mexico to Costa Rica, and Cocos Island (Gomon, 1995).

The new record from Réunion Island, Southwest Indian Ocean, presented here extends tremendously the distribution range of *P. russelli* to the west, across the Indo-Pacific Ocean.

MATERIAL AND METHODS

The specimen was obtained from Pascal Enilorac, a professional fisherman at the port of Saint-Gilles les Bains, Réunion, on the 4th of March 2010 (Fig. 1). The fisherman caught the specimen while targeting deep-sea demersal fish (150-600 m), mostly *Pristipomoides* spp. and *Gymnocranius* spp., with hook and line using electric winch.

To corroborate identification, the sequence for the partial (barcode region) Cytochrome oxidase 1 (COI) was obtained, and compared to reference sequences in the Barcode of Life Database (BOLD). While there is no rhodopsin retrogen sequence for the species yet in the databases, we also sequenced this nuclear marker for the specimen to establish a future reference. We followed Dettai *et al*. (2012) for DNA extraction, PCR, sequencing and quality control. We however used CodonCode Aligner 3.9 (Codon Code Corporation) for sequence checking and control. The sequences were deposited in the BOLD under process number SCIPB055-12. The sequences were used to blast search the full BOLD, as well as GenBank.

The Réunion specimen was deposited in the fish collection at the Muséum national d'histoire naturelle (MNHN) under the number MNHN 2010-0048. A second specimen, originating from Moorea, Society Islands was also examined: MNHN 2008-1173.

Figure 1. - *Polylepion russelli* (Gomon & Randall, 1975): live coloration, MNHN 2012-0048, 275 mm TL. Photograph by P. Béarez.

RESULTS

Both morphometric and molecular data confirm that the labrid specimen collected from Réunion belongs to the species *Polylepion russelli*.

Morphologic data. - 275 mm TL; 224 mm SL; 81 mm head length; 270 g total weight; dorsal-fin rays XI, 11; anal-fin rays III, 11; pectoral-fin rays ii 19; lateral line scales 50; lateral line uninterrupted, smoothly curved toward midline; dorsal and anal fins without scaly basal sheath; predorsal scales extending past to anterior nostril; red and black spot present dorsally on the caudal-fin base (Fig. 1).

Molecular data. - There is only one COI sequence in BOLD (the only sequences in GenBank are copies of the BOLD sequence) for *Polylepion russelli*, MBIO1871. This sequence corresponds to the specimen MNHN 2008-1173 examined for the morphology. The sequence of our specimen is highly similar (99.83%) with MBIO1871 sequence. This level of similarity is generally charac-

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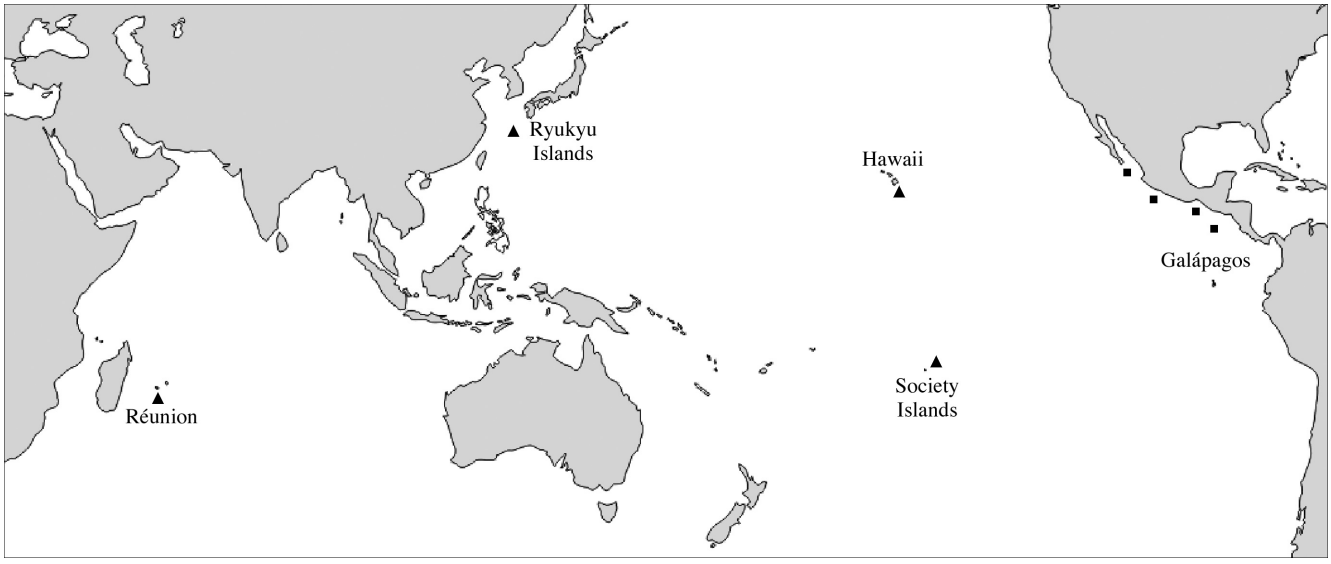

Figure 2. - Localisation map of records for *Polylepion russelli* (▲) and *Polylepion cruentum* (■).

teristic of intraspecific divergence (Ward *et al*., 2009), strongly corroborating the identification as *P. russelli*. There is no sequence for the second species of *Polylepion* available for comparison.

DISCUSSION

Finding *P. russelli* some 10 000 km west of its previously known distribution is surprising (Fig. 2), may be not so much *per se* but because of the lack of records between the two areas. Other groups have members with transpacific distribution that are found from Réunion to Galápagos (Letourneur *et al*., 2004; McCosker and Rosenblatt, 2010). Among them are species within the Scorpaenidae (e.g. *Taenianotus triacanthus*), Lutjanidae (*Pristipomoides zonatus*), Scaridae (e.g. *Calotomus carolinus*, *Scarus ghobban*), and Labridae (e.g. *Iniistius pavo*, *Thalassoma purpureum*). Most of them occur throughout the Indo-Pacific. Disjunct distributions like that of *P. russelli* are rare, this may be due to a lack of deepwater reef sampling, but also to the scarcity of the species. Both species of *Polylepion* are known from only a few specimens and are likely non-gregarious labrids inhabiting deepwater reefs in low-density populations.

Acknowledgements. – The first author (PB) is grateful to Françoise and Dany Renambatz (Saint-Gilles les Hauts) for their help during the collection of the specimen. This project was supported by the network "Bibliothèque du vivant" funded by the CNRS, the MNHN, the INRA and the CEA (Genoscope) and the "Service de systématique moléculaire" of the MNHN (UMS 2700).

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